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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,847

02/18/2005

Sylke Klein

MERCK-2973

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EXAMINER

EMPIE, NATHAN H

ART UNIT

PAPER NUMBER

1709

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/524,847	KLEIN ET AL.	
	Examiner	Art Unit	
	Nathan H. Empie	1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Examiner acknowledges receipt (on 2/18/05) of preliminary amendments to claims 3-9 that have been entered into your file. Claims 1-9 are presently pending.

Claim Rejections - 35 USC § 112

Claims 5-8 provides for the use of an etching medium of claim 1, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 5-8 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Klein et al (Merck Patent, DE 10101926, hereafter '926).

'926 teaches an amorphous, partially crystalline or crystalline surface of titanium oxides which have been treated with an etching media ([0049]). "Even though product-by-process claims are limited by

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and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over '926.

'926 teaches a printable and dispensable etching medium in the form of an etching paste (Abstract) having non-Newtonian preferably thixotropic flow behavior ([0035]) for the etching of amorphous, crystalline or partially crystalline surfaces of titanium oxides ([0003-8]), characterised in that it is effective at 15-50.degree. C. and/or can be activated by the input of energy [0030] and comprises the following components:

a) an etching component, ammonium hydrogen difluoride in a concentration of 8.5-9.5% by weight, based on the total amount (claim 6 discloses a preferred range of 5-15%, and example 4)

(b) optionally at least one inorganic and/or organic acid having a content of 24-26% by weight, based on the total amount of the medium, where the organic acid present can be an organic acid having a pK_a value of between 0 and 5 selected from the group consisting of carboxylic acids, such as formic acid, acetic acid, dichloroacetic acid, lactic acid and oxalic acid (claims 7-9 disclose 0-80% and example 4),

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c) a solvent selected from the group consisting of water, ethers, such as ethylene glycol monobutyl ether, triethylene glycol monomethyl ether, esters of carbonic acid, such as propylene carbonate, ketones, such as 1-methyl-2-pyrrolidone, as such or mixtures thereof in an amount of 52-57% by weight, based on the total amount of the etching medium (claim 10 discloses a preferred range of 15-85%, and example 4),

d) 10.5-11.5% by weight, based on the total amount of the etching medium, of cellulose derivatives and/or polymers, such as polyvinylpyrrolidone, as thickener (claim 11 discloses a preferred range of 3 to 20%, and example 4),

e) optionally 0-0.5% by weight, based on the total amount, of additives selected from the group consisting of antifoams, thixotropic agents, flow-control agents, deaeration agents and adhesion promoters (claim 12 discloses 0 to 5%,).

In cases where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In *re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA). Therefore, it would have been obvious at the time of invention to have selected the ranges disclosed for each of the appropriate components as they were taught by '926.

Claim 2: '926 teaches an etching medium according to claim 1 (see above), characterised in that it comprises ammonium hydrogen difluoride as etching component for oxidic surfaces, ethylene glycol monobutyl ether, triethylene glycol monomethyl ether, propylene carbonate and water as solvents, formic acid as organic acid and polyvinylpyrrolidone as thickener (claims 6-11 and example 4).

Claim 3: '926 teaches a process for the etching of amorphous, crystalline or partially crystalline surfaces of titanium oxides ([0003-0008]), characterised in that an etching medium according to claim 1

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(see above) is applied to the surface to be etched and is removed again after an exposure time of 0.1-15 minutes ([0027] and claim 13).

Claim 4: '926 teaches a process according to claim 3 (see above), characterised in that the etching medium is applied over the entire surface or specifically in accordance with the etch structure mask only to the areas where etching is desired, and, when etching is complete, is rinsed off using a solvent or solvent mixture or fired in a furnace (claims 23 and 24, and [0068]).

Claim 6: '926 teaches the use of an etching medium according to claim 1 (see above) in screen, template, pad, stamp, ink-jet and manual printing processes and the dispensing technique (claim 15).

Claim 7: '926 teaches the use of an etching medium according to claim 1 (see above) for the etching of amorphous, partially crystalline and crystalline Ti_xO_y systems, as uniform solid non-porous and porous solids or corresponding non-porous and porous layers of variable thickness which have been produced on other substrates (claim 17).

Claim 8: '926 teaches the use of an etching medium according to claim 1 (see above) for the removal of amorphous, partially crystalline and crystalline Ti_xO_y layers, for the selective opening of antireflection layers comprising Ti_xO_y systems for the production of two-stage selective emitters and/or local p^+ back surface fields in solar cells (claim 19).

Claim 9: '926 teaches an amorphous, partially crystalline or crystalline surface of titanium oxides which have been treated with an etching media according to claim 1 ([0049]). "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

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Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Klein et al. (Merck patent, DE 10101926, hereafter '926), and further in view of Ho (US 2001/0016370 A1, hereafter '370).

'926 teaches the use of an etching medium according to claim 1 (see above) for the production of marks and labels of Ti_xO_y glasses, ceramics and other Ti_xO_y -based systems (claim 14). '926 does not teach the roughening of these materials for improving the adhesion. '370 teaches the etching of a dielectric material (62) to roughen the surface and thereby promote adhesion for the subsequent deposition (Fig 3d and [0074]). Ti_xO_y materials can act as dielectrics so they could be etched as a means of roughening to promote better adhesion. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have roughened the surface, as taught by '370, of the Ti_xO_y materials described in '926 to have promoted adhesion for subsequent deposition.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US3326803 as it describes the use of methylcellulose as a thickener in a fluoride-based brightener.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan H. Empie whose telephone number is (571) 270-1886. The examiner can normally be reached on M-F, 6:45-4:15 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571) 272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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MICHAEL B. CLEVELAND
SUPERVISORY PATENT EXAMINER